Conclusions: Cardiometabolic dysfunction is related to knee OA prevalence and persists within subgroups defined by obesity status and gender. A sex dimorphism in the direction and magnitude of cardiometabolic risk factors with respect to knee OA was described including HOMA-IR being associated with OA prevalence among men while leptin levels were most important among women.

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PRODUCTIVITY COSTS AND MEDICAL COSTS AMONG WORKING PATIENTS WITH KNEE OSTEOARTHRITIS

J. Hermans[1], M.A. Koopmanschap[2], S.M. Bierma-Zeinstra[1], M. Reijman[1], J.A. Verhaar[1], A. Burdorf[1]. *[1]Erasmus MC Univ. Med. Ctr., Rotterdam, Netherlands; [2]Inst. for Med. Technology Assessment, Rotterdam, Netherlands*

Purpose: Osteoarthritis (OA) accounts for the majority of the economic burden of arthritis, estimated at 1 to 2.5% of the gross national product in western countries. Productivity costs and medical costs are the main contributors in this economic burden.
Productivity costs are influenced by several patient-, health- and work characteristics. Body mass index (BMI), musculoskeletal complaints and symptom severity are known for their association with productivity loss. Physical work related factors like lifting heavy loads and psychosocial work related factors like low job autonomy, high job demands and emotionally demanding work are also associated with productivity loss.
Although the knee joint is the most affected joint by OA, research on economic implications focussed merely on OA in general. The main goal of this study was to identify and quantify productivity costs and medical costs in knee OA patients participating in the Dutch labour force. Furthermore, we wanted to evaluate associations between productivity loss and relevant patient-, health- and work characteristics.
Methods: Consecutive knee OA patients consulting an orthopaedic surgeon were included. Inclusion criteria were: Kellgren and Lawrence grade I-III, visual analogue scale (VAS) for pain ≥ 2, age 18–65, conservative treatment ≥ 6 months and participation in the Dutch labour force at time of inclusion.
Productivity loss and absence from work are measured by the Productivity and Disease Questionnaire (PRODISQ). Reduced productivity while being present at work is measured by a quality and quantity scale from 0–10 included in the PRODISQ, in which 10 indicates normal quality or quantity.
Health care consumption was obtained through questionnaires and valued according to Dutch guideline prices and Dutch Health Care Insurance Board tariffs. Regression analyses were used to explore associations between productivity loss and relevant patient-, health- and work characteristics.
Results: In total, 117 knee OA patients were included with a mean age of 53.2 (range 18–65) and a mean BMI of 28.8 (SD 5.1). The mean quantity score was 8.6 (SD 2.3) and the mean quality score was 9.3 (SD 1.6). Productivity loss due to knee complaints (reduced quantity or quality) was reported by 47 subjects (40%) and absence from work by 23 (20%) subjects. Mean productivity loss while being present at work was 14% and patients were 1.5 hours absent from work per week. Housekeeping was compensated by relatives for 1.4 hours per week.
On average, the physical therapist was visited 1.37 times per month; the orthopaedic surgeon and the general physician were visited 0.42 and 0.28 times respectively. Bandages, compresses and braces were the mobility aids used most. Acetaminophen and non-steroidal anti-inflammatory drugs were the drugs used most, with an average of 14.9 and 11.7 tablets per month respectively.
The total monthly costs per symptomatic knee OA patients participating in the labour force are € 830.73. Productivity costs were € 721.80 and medical costs were € 108.93. Productivity costs while being present at work account for 54% of the total costs.
A higher VAS pain during activity and performing physical hard work showed significant associations with productivity loss due to lower quantity of work in the multivariate analyses. A higher VAS pain during activity and a poor socio-emotional work environment were significantly associated with productivity loss due to lower quality at work. Performing physical hard work was significantly associated with absence from work.
Conclusions: Total productivity costs and medical costs of conservatively treated symptomatic knee OA patients in the Dutch labour force are € 830.73 per month. Productivity costs account for 87% of these costs. A higher VAS pain during activity, poor socio-emotional work environment and performing physical hard work were significantly associated with productivity loss due to knee complaints.

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EPIDEMIOLOGICAL ASPECTS OF OSTEOARTHRITIS (OA) IN VENEZUELA: A FREQUENCY STUDY

H.L. Riera[1], M. Vera[1], R.A. Torres[1], S. Villegas[2], M. Rodriguez[2], E. Chirinos[2], E. Rodriguez[2], S. Balcazar[2], F. Marín[2], C. Acosta[2], V. Rodriguez[1], L. Betancourt[1], R. Arapé[2], G. Sanoja[2], M. Azocar[2], A.M. Reginato[3], L. Pierini[2], M. Quintero[1]. *[1]Univ. de Los Andes, Mérida, Venezuela, Bolivarian Republic of; [2]Grupo OA Venezuela, Mérida, Venezuela, Bolivarian Republic of; [3]The Warren Alpert Sch. of Med. at Brown Univ., Providence, RI, USA*

Purpose: The aim of the present study is to investigate epidemiological aspects of Osteoarthritis (OA) in Venezuela.
Methods: A multi-center study was conducted in 13 different states from Venezuela that included 1202 patients evaluated at rheumatology outpatient clinics with defined ACR criteria of Osteoarthritis (OA). Epidemiologic aspects were collected using standardized questionnaire between July 1st and September 30th 2010 time period.
Results: 1202 patients met OA criteria for this study. The mean age of patients was 61.7 year-old. There was a 3.4:1 female/male ratio. Mean Body Mass Index (BMI) was 29.2. Overweight (BMI > 25) was seen in 83.4% while obesity (BMI > 30) in 43.1%. Approximately 89% of the patients had primary OA and the time of consultation with diagnosis made within 4 years. Specific OA joint involvement: only knee OA was seen in 342 patients (28.5%); only hands OA in 138 patients (11.5%); hands and knee OA seen in 198 patients (16.5%); axial involvement (cervical and lumbar spine) was seen, together in 82 patients (6.8%); and knee joint involvement with any other joint in 900 patients (74.9%). Radiographic severity of OA on the basis of the Kellgren-Lawrence grading scale (0–4) showed that 84.7% of patients had Kellgren-Lawrence grade 2 (35.4%) and 3 (49.3%). Treatments options for OA included: only NSAIDs (4.6%); NSAID in combination with any other drug (80%); only glucosamine sulphate+chondroitin (55%); glucosamine sulphate + chondroitin +NSAIDs (18.2%); and glucosamine sulphate +chondroitin + others (71%). Comorbidities associated with OA: none seen in 169 patients (14%); only hypertension seen in 151 patients (12%); hypertension with all others in 478 patients (39.8%); only obesity in 117 patients (9.7%); only diabetes seen in 32 patients (2.7%) and diabetes with all others131 patients (10.9%)
Conclusions: This is the first Venezuelan study to evaluate the frequency of OA in rheumatology outpatient setting. This study showed, as well as Latino American results, strong correlation of OA with age greater rate among women than men of the same age. In agreement with other epidemiological studies BMI correlated with frequency of OA. Knees and hands were the most frequently specific joints involved in OA. Treatment of OA between 13 states of Venezuela, showed a diverse spectrum ranging from a combination of analgesic with NSAID to chondroprotection and viscosupplementation. Hypertension, obesity and diabetes were the three most common comorbid conditions more frequently found in our patients. Our epidemiological findings are in agreement with other epidemiological studies and provide a better understanding of the factors contributing to the development of OA in Venezuela and the Latin American population.

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ARTHRITIS AND DIABETES MELLITUS ASSOCIATED WITH MOBILITY IMPAIRMENT: A POPULATION-BASED STUDY

S. Tata[1], S. Morewitz[2]. *[1]Stephen J. Morewitz, Ph.D., & Assoc., San Francisco, CA, USA; [2]California state Univ., East Bay, San Francisco, CA, USA*

Purpose: Studies have found that arthritis is associated with an increased risk of disability. However, with the increased prevalence of co-morbid chronic health problems among adults, more research is needed to determine the impact of having arthritis and other co-morbid chronic disorders.
Methods: Data from the 2003–2004 National Health and Nutrition Examination Survey (NHANES) (N = 5,000) were used to assess the possible association of having arthritis and diabetes mellitus with the need of special equipment to walk. The Survey obtained self-report data from persons with arthritis and diabetes on health problems, including the need of special equipment to walk and other measures of

mobility and impairment. Using SAS and SUDAAN statistical programs, correlational and general linear model procedures tested the null hypothesis that among women and men, having arthritis and diabetes mellitus is not positively associated with needing special equipment to walk. Variables were fitted in general linear model to perform further analysis and control for possible confounding variables.
Results: The null hypothesis was rejected. Among women, having arthritis was positively associated with needing special equipment to walk ($r = +0.236$, $p < 0.0001$, $N = 2,622$). Having diabetes mellitus also was positively related to needing special equipment to walk, but the correlation was lower ($r = +0.149$, $p < 0.0001$, $N = 2,622$). Among men, having arthritis also was positively associated with needing special equipment to walk ($r = +0.240$, $p < 0.0001$, $N = 2,418$). Among men, having diabetes mellitus also was positively related to needing special equipment to walk, but the correlation was lower ($r = +0.161$, $p < 0.0001$, $N = 2,418$).
Conclusions: This study shows that among women and men, having arthritis is more strongly associated with needing special equipment to walk than having diabetes mellitus. Further research is needed to explore the possible effects of having arthritis and chronic co-morbid conditions on level of impairment.

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EFFECT OF WEATHER CONDITIONS ON PATIENTS WITH HIP OSTEOARTHRITIS

D.M. Dorleijn, M. Bouterse, P.A. Luijsterburg, K. Bos, R.M. Rozendaal, J.A. Verhaar, S.M. Bierma-Zeinstra. *Erasmus MC, Rotterdam, Netherlands*

Purpose: Patients frequently assert that weather conditions influence osteoarthritis (OA) symptoms. However there is little scientific evidence on this topic. Previous studies have showed conflicting outcomes.
The aim of this study is to assess the influence of weather circumstances on patients' OA symptoms.
Methods: For this study we used the data from 222 patients with hip OA who participated in a randomized controlled trial (RCT) that assessed the effectiveness of glucosamine. These patients were included from general practices in the area of Rotterdam, the Netherlands. Because the results of this RCT showed that glucosamine showed no effect on the symptoms and radiographic progression of hip OA, the analyses were performed on the total patient population.
The primary outcome measures were the WOMAC subscores for pain, function and stiffness and hip pain severity during the previous week measured with a visual analogue scale (VAS, range 0–100). Outcomes were obtained every 3 months during a follow-up of 24 months.
The local weather variables of the patients' residences were retrieved from the Royal Netherlands Meteorological Institute and included: temperature, wind speed, sun hours, precipitation, barometric pressure and relative humidity. The mean of these weather variables for one, two and seven days preceding the questionnaire dates (from all nine 3-month questionnaires) were collected.
For data-analyses the linear mixed model analysis for repeated measurements was used which was adjusted for age, gender, body mass index and OA factors: localized versus generalized OA, radiologic severity of OA (Kellgren-Lawrence grading 1 versus ≥2), duration of OA complaints, unilateral versus bilateral hip OA, use of analgesics and use of glucosamine.
(Preliminary) results: The mean weather variables over two and seven days did not show an association with pain severity or WOMAC pain score.
However, the weather variables over one day showed the following associations:
Binary analyses: An increase of relative humidity was associated with a higher WOMAC pain score (regression coefficient 0.09, 95%CI 0.02–0.16) and a higher WOMAC function score (regression coefficient 0.04 95%CI −0.02–0.10); an increase of wind speed with a lower WOMAC function score (regression coefficient −0.21, 95%CI −0.42–0.01); an increase of barometric pressure with a higher WOMAC function score (regression coefficient 0.07, 95%CI 0.02–0.12).
Multivariate analyses: An increase of relative humidity was associated with a higher WOMAC pain score and an increase of barometric pressure with a higher WOMAC function score.
Currently we are performing additional sensitivity analyses in order to evaluate intra-individual changes in pain severity and WOMAC scores.
Conclusions: An increase of relative humidity of one full day before filling in questionnaires is associated with a higher WOMAC pain score and an increase of barometric pressure with a higher WOMAC function score. The mean weather variables at two and seven days before filling in questionnaires did not influence OA symptoms.

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POPULATION-BASED ESTIMATES OF THE INCREASED RISK FOR SICK LEAVE AND DISABILITY PENSION AMONG PATIENTS WITH KNEE OSTEOARTHRITIS

J. Hubertsson[1], C.A. Thorstensson[1,2], I.F. Petersson[1], M. Englund[1]. [1]*Clinical Sci. Lund, Lund Univ., Lund, Sweden;* [2]*Dept of Res. and Dev., Spenshult, Oskarström, Sweden*

Purpose: To investigate the extent of sick leave and disability pension in patients with knee osteoarthritis (OA) and to compare these figures with the general population using prospectively ascertained cohort data.
Methods: Using the Skåne Health Care Register we identified all subjects seeking health care in primary, secondary, or in hospital care (including joint replacement surgery), registered with the diagnosis of OA of the knee (ICD-10 code M17) at least once during the period of 1998–2009. We also required subjects to be aged 16–64 years and resident in the Skåne County during 2009 via cross-linking with population records. Using subjects' unique personal identification number, we then linked year 2009 social insurance data administered by the Swedish Social Insurance Agency (SSIA) – an agency which is responsible for all sickness benefit exceeding 14 days and disability pension payments. First, we calculated the share of male and female knee OA patients who during 2009 had received either sickness benefit or received disability pension payment. Second, we estimated the increase in risk for having received sickness benefit or disability pension payment during 2009 compared to the general population in Skåne County aged 16 to 64 years (n = 789 366) standardised for age. In addition, for 2009 we calculated the mean number of days with sickness benefit or disability pension compensated by SSIA per subject with knee OA. We did the same for all residents in Skåne County and calculated age-standardised sick day ratios and their 95% confidence intervals (95% CIs). To estimate the proportion of the total number of sick leave and disability pension days attributable to knee OA (or its associated comorbidities), we calculated the total amount of days generated by knee OA patients and subtracted the total amount of days expected (assuming the same rate of sick leave/disability pension as in the general population standardised for age and sex). We then divided the remaining share with the total amount of days for the county to calculate the proportion of days specific to knee OA patients.
Results: We identified 15 345 persons (49.6% women) who had been diagnosed with knee OA during the last 12 years and were at working age and resident in Skåne during 2009. They had a mean (SD) age of 55 (8.2) years for women and 53 (9.2) years for men. More women than men with knee OA had received sickness benefit or disability pension payment during the year 2009, 48% vs. 31% ($p < 0.001$). Compared to the general population the risk for having had one or more episodes of sick leave was 1.82 (95% CI 1.73–1.91) for women and 2.03 (95% CI 1.92–2.14) for men and the risk for disability pension was 1.54 (95% CI 1.48–1.60) for women and 1.36 (95% CI 1.28–1.43) for men. The mean (SD) numbers of sick days (including days of sick leave and of disability pension) per knee OA patient and year was 114 (155) days for women and 63 (124) days for men. The overall age-standardised (net) sick day ratio for sick leave for patients with knee OA was 2.07 (95% CI 2.06–2.08) for women and 2.18 (95% CI 2.17–2.19) for men. For disability pension the corresponding rations were 1.52 (95% CI 1.52–1.53) for women and 1.29 (95% CI 1.28–1.29) for men. Of all sick leave and disability pension in the entire population, 2.0% of days were estimated to be attributable to knee OA (or its associated comorbidity). For sick leave the proportion attributable to knee OA was 3.1%, and the corresponding proportion for disability pension was 1.7%.
Conclusions: Patients with knee OA have an almost two-fold increased risk for sick leave and about 40–50% increased risk for disability pension compared to the general population. Further, in the Swedish population about 2% of the total amount of sick days in the society is attributable to knee OA or its associated comorbidities.